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	28 December 1981	
MEMORANDUM FOR:	Robert C. Saunders IHSA	
FROM:		
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SUBJECT:	Report of Working Group III	
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Executive Summary

The most serious problem which the CIA has in Scientific and Technical Facilities is a shortage of persons with the skills to develop, maintain, and use the required hardware and software. The problem will become more acute in the 1985-1989 period. Unless Agency management acts to meet this shortfall, we will accelerate and make permanent our already increasing dependence on external contracts to meet this need.

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Models, interactive graphics, and special machinery already are an essential part of our intelligence process. Because they provide powerful tools for collection and analytical support, they are in increasing demand and are becoming more complex and expensive. Yet they are only now reaching the takeoff point in the growth curve. The 1970s was a decade of rapid growth in terminals and data bases in the CIA. In the mid 1980s, models and interactive graphics will grow at a correspondingly rapid rate, and we cannot forecast that growth except by analogy. Specialized signal processing facilities and other special equipment will become more complex and expensive, but their use will not become as pervasive as will the use of models and interactive graphics.

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If the CIA is able to provide the trained people and the facilities, the overall effect on intelligence collection, production, and special operations could be nearly revolutionary. By the end of the decade the CIA could change more than it has changed in the last two decades. These tools can provide an order of magnitude of improvement in: The speed of intelligence production; the breadth and accuracy of analysis; the volume of technical intelligence processed, and the quality of the product; the quality of information and decision tools in the hands of special operations managers; and in crisis management capability.

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In order for these tools to fulfill their promise, several additional requirements must be satisfied.

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We will require a carefully planned architecture for handling and interrelating complex analysis models. This must include provisions for supplying large volumes of data to the models or processing equipment from a wide variety of sources, from unclassified trade data to highly compartmented technical collection data. Standardization of data bases and flexibility of data base use are essential.

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We foresee a strong demand for the skilled management of models and signal processors, the demand for which will be akin to the earlier demand for data base management systems which resulted from the data base chaos of the 1960s. Both this requirement and the requirement of the preceding paragraph will require a major Agency R&D effort in the early 1980s.

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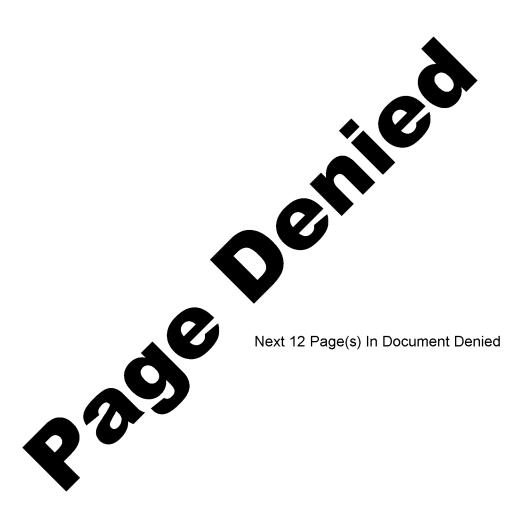
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Models, signal processors, and special operations support will make increasing use of an interactive graphics terminal as the work station of choice. We will require an off the shelf capability for interactive graphics terminals which have the flexibility to meet differing needs.	25 X 1
The need for increased processing capability will exist during the	
planning period. Because of the requirement to produce results from interrelated scientific and modeling analysis in a timely manner we	
cannot be constrained by today's limitations in the areas of size,	
scheduling and resources. These applications demands must be met in an unconstrained, timely manner.	25 X ′
In general, special machinery is not discussed in this report,	•
even though it is in the original charter to Working Group III.	
Special machinery is a solution, not a requirement, and our charter is	
limited to stating requirements.	25 X 1
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